

Appl. No.: 10/674,956

Amdt. Dated July 28, 2006

Response to Office Action Mailed February 21, 2006

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions and listings of claims in this application.

1. (Currently Amended) An optical wave guide element having a substrate which has electro-optic effect and an optical wave guide formed on the substrate, comprising:

a reflective means formed on a side of the substrate where an incoming end of the optical wave guide is positioned; and

an input optical fiber connected directly to the substrate ~~which is placed and positioned~~ apart from the optical wave guide,

wherein the reflective means is positioned so that a light wave exiting from the input optical fiber propagates within the substrate excluding the optical wave guide toward the reflective means, and is reflected from the reflective means to enter the optical wave guide,

and the input optical fiber and the optical wave guide are positioned so that an angle formed between an output direction of the ~~light wave from the~~ input optical fiber and an input direction of the ~~light wave to the~~ optical wave guide is set at approximately 90°.

2. (Currently Amended) An optical wave guide element having a substrate which has electro-optic effect and an optical wave guide formed on the substrate, comprising:

a reflective means formed on a side of the substrate where an outgoing end of the optical wave guide is positioned; and

an output optical fiber connected directly to the substrate ~~which is placed and positioned~~ apart from the optical wave guide,

wherein the reflective means is positioned so that a light wave exiting from the optical wave guide is directed toward the reflective means, from which the light wave is reflected from the reflective means, and propagates within the substrate excluding the optical wave guide to enter the output optical fiber,

and the output optical fiber and the optical wave guide are positioned so that an angle formed between an output direction of the ~~light wave from the~~ optical wave guide and an input direction of the ~~light wave to the~~ output optical fiber is set at approximately 90°.

3. (Previously Presented) The optical wave guide element according to Claim 1, wherein the propagation distance of light waves that propagate inside the substrate excluding the optical wave guide, is 200 μm or less.

4. (Previously Presented) The optical wave guide element according to Claim 1, wherein an angle formed between a normal direction of the reflective means and an optical axis of the optical wave guide that makes contact with the reflective means is no smaller than an angle of total reflection of light waves that are transmitted through the optical wave guide.

5. (Previously Presented) The optical wave guide element according to Claim 1, wherein the reflective means comprises a reflective film.

6. (Previously Presented) The optical wave guide element according to Claim 1, wherein the input optical fiber is connected to a side of the substrate where the reflective means is not formed, or to a bottom surface of the substrate.

7. (Previously Presented) The optical wave guide element according to Claim 2, wherein the output optical fiber is connected to a side of the substrate where the reflective means is not formed, or to a bottom surface of the substrate.
8. (Previously Presented) The optical wave guide element according to Claim 2, wherein the propagation distance of light waves that propagate inside the substrate excluding the optical wave guide, is 200 μm or less.
9. (Previously Presented) The optical wave guide element according to Claim 2, wherein an angle formed between a normal direction of the reflective means and an optical axis of the optical wave guide that makes contact with the reflective means is no smaller than an angle of total reflection of light waves that are transmitted through the optical wave guide.
10. (Previously Presented) The optical wave guide element according to Claim 6, wherein an angle formed between a normal direction of the reflective means and an optical axis of the optical wave guide that makes contact with the reflective means is no smaller than an angle of total reflection of light waves that are transmitted through the optical wave guide.
11. (Previously Presented) The optical wave guide element according to Claim 2, wherein the reflective means comprises a reflective film.
12. (Previously Presented) The optical wave guide element according to Claim 6, wherein the reflective means comprises a reflective film.
13. (Previously Presented) The optical wave guide element according to Claim 7, wherein the reflective means comprises a reflective film.
14. (Previously Presented) The optical wave guide element according to Claim 2, wherein the reflective means separates light waves transmitted from the optical wave guide side into transmitted light and reflected light so that the transmitted light is made to enter a light receiving element provided outside the substrate.

15. (Previously Presented) The optical wave guide element according to Claim 7, wherein the reflective means separates light waves transmitted from the optical wave guide side into transmitted light and reflected light so that the transmitted light is made to enter a light receiving element provided outside the substrate.

16-20. (Cancelled).

21. (Previously Presented) The optical wave guide element according to Claim 6, wherein the propagation distance of light waves that propagate inside the substrate excluding the optical wave guide, is 200 μm or less.

22. (Previously Presented) The optical wave guide element according to Claim 7, wherein the propagation distance of light waves that propagate inside the substrate excluding the optical wave guide, is 200 μm or less.

23. (Previously Presented) The optical wave guide element according to Claim 7, wherein an angle formed between a normal direction of the reflective means and an optical axis of the optical wave guide that makes contact with the reflective means is no smaller than an angle of total reflection of light waves that are transmitted through the optical wave guide.

24-25. (Cancelled).